

REMARKS

Claims 1-20 continue to be the pending claims in the application. Claims 2-6, 8-12, 14 and 15 are withdrawn.

The Examiner noted that in Applicants' previous response claims 15 and 19 were omitted from the listings of the claims. This was an inadvertent clerical error. In response, Applicants submit a new listing of the claims which include all the claims and designate claims 2-6, 8-12, 14 and 15 as withdrawn. The Applicants also respectfully request that the Examiner reconsider the withdrawal of claim 8 from consideration. Claim 8 depends on claim 1.

The Examiner indicated in the Office Action that the previous grounds of rejection have been withdrawn and have been replaced with an updated interpretation of the references.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 7, 13 and 16-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lynn et al. (US 6,093,481) in view of Horner Jr. et al. (U.S. Patent No. 6,365,533) and Martin et al. (U.S. Patent No. 5,713,974).

The Examiner states that Lynn et al. relates to an insulation sheathing (facer) for an insulation board, which as shown in Fig. 2 is a bilaminate with inner layers 17 and 18 being fibrous or metallic, etc. [col. 4, lines 50-65]. The Examiner further states that the outer layers 11 and 12 of Lynn et al. can be any conventional foam layer and that the polymeric layers may be modified by additives, such as filler, fire retardants, etc. and may be attached to other layers [col. 3, lines 9-14, 26-37 and 49-53]. The Examiner then states that Lynn et al. lacks a teaching that the outer layer of the bilaminate comprises a prefabricated microcells component, a surfactant component and surfactant-generated microcells.

The Examiner then states that Horner Jr. et al. teaches a foamed facer for an

insulation board that comprises a fiber glass mat coated with a prefoamed composition comprising a thixotropic polymer latex (binder), a foam sustaining surfactant (surfactant generated microcells), a filler, such as clays and a flame retardant. The Examiner acknowledges that Horner lacks the teaching that the coating includes prefabricated microcells and that the metallic layer is adhered to the foamed facer.

The Examiner also states that Martin et al's invention relates to insulating microspheres for providing a high insulating value to insulating coatings and that it would have been obvious to the skilled artisan to combine Lynn et al., Horner Jr. et al. and Martin et al.

The Claimed Invention

Claim 1 relates to a heat insulating and fire resistant composite material comprising a first layer which comprises a prefabricated microcells component, a surfactant component, surfactant-generated microcells, a filler component and a binder component and a second layer comprising a metallic component adhered to the first layer. Claims 7-20 are dependent from Claim 1.

The Prior Art

Lynn et al. relates to rigid foam insulation boards having tough, lightweight, highly insulating facers. Col. 1, lines 54-57. One or both facers of Lynn et al. are polymeric materials that are characterized as a film by Lynn et al. Col. 3, lines 26-28. Lynn et al. indicates that the total thickness of the insulation boards is about 0.5 inches (~ 12.7 mils to about 4.25 inches (~106 mils), of which the thickness of the facing sheets is generally 0.3 mils to 5 mils, with monolayer facers being preferably about 0.3 mils to 3 mils and composite facers being preferably about 0.3 mils to 4 mils. Col. 5, lines 34-41.

Horner Jr. et al. disclose a facer member for use in the construction industry

comprising a preformed fiber mat substrate coated on one side with a prefoamed, self-sustaining foam mixture. The facer member disclosed by Horner Jr. et al. can be used to manufacture insulation boards comprising a pair of facer members laminated to the surfaces of the foam core of a traditional insulation board. *See* Horner Jr. et al., col. 5, lines 34-39. The facers of Horner et al. include a coating that is from about 5 mils to about 100 mils. Col. 4, lines 6-15. The facers of Horner et al. further include a fibrous mat on which the coating is applied, which have a thickness of about 10 to about 30 mils. Col. 3, lines 34-35. Horner et al. further teaches that the facers can have a thickness of about 100 mils.

Martin et al. disclose evacuated microspheres and methods of manufacture of the microspheres. The evacuated microspheres are indicated as being useful as thermal insulating materials when incorporated into insulating coatings. *See* the Abstract; col. 1, lines 8-11; and col. 3, lines 62-67.

There is No *Prima Facie* Case of Obviousness

The combination of Lynn et al., Horner Jr. et al. and Martin et al. does not support a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the combined references must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and must not be based on the Applicants' disclosure. *In re Vaeck*, 947 F2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991); MPEP § 2142.

In this case, there is no suggestion or motivation in any of the cited references to alter Lynn et al. to produce a composite material according to the present claims. The mere fact

that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

“It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986).

Because virtually all inventions are combinations of old elements, “the suggestion to combine requirement stands as a critical safeguard against hindsight analysis”. *Yamanouchi Pharm. Co. v. Danbury Pharmacal, Inc.*, 231 F.3d 1339, 1343 (Fed. Cir. 2000). See also *Grain Processing Corp. v. Am. Maize-Props. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (“the question is whether there is something in the prior art as a whole to suggest the desirability, and thus, the obviousness of making the combination”); *Gillette v. S.C. Johnson & Son, Inc.*, 919 F.3d 720, 724 (Fed. Cir. 1990) (“Focusing on the obviousness of substitutions and differences, instead of on the invention as a whole, is a legally improper way to simplify the often difficult determination of obviousness”).

In its recent decision in *KSR Int'l Co. v. Teleflex Inc.*, 27 S.Ct. 1727, 1734, 82 USPQ2d 1385 (2007), the Supreme Court noted that it had previously set out a framework for applying the statutory language of § 103 in *Graham v. John Deere Co.*, 383 U.S. 1 (1966) in which it held that the analysis is objective:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Graham 382 U.S. at 17-18.

Referring to this framework set out in *Graham*, the Supreme Court in *KSR* further stated that “while the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls.” *KSR*, 27 S.Ct. at 1735.

The Supreme Court in *KSR* also stated that

when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product [is] not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

Id. at 1742, Emphasis added.

Here, the Supreme Court made clear that only in the instance where there are a finite number of identified predictable solutions, can the standard of “obvious to try” be applied and even then, this standard does not necessarily result in a finding of obviousness because it only “might” show that it was obvious.

In the case of *In re Fritch*, 972 F.2d 1260, 1266 (1992) the Federal Circuit forbid “hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention”. See also *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1050-51 (Fed. Cir. 1988) (“The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time[.]”).

As noted above, the Examiner states that Lynn et al. teaches that the outer layers of the insulation boards can be any conventional foam layer and that the polymeric layers may be modified by additives, such as filler, fire retardants, etc. and may be attached to other layers [col. 3, lines 9-14, 26-37 and 49-53]. The Examiner then states that Lynn et al. lacks a teaching that the outer layer of the bilaminate comprises a prefabricated microcells component, a surfactant component and surfactant-generated microcells. First, applicants wish to point out that Lynn et

al. does not indicate that the conventional foam facers can be modified by additives, but rather the polymeric facers of the invention can be modified by additives. Furthermore, Applicants note that the facers of Lynn et al. are characterized as films at col. 3, line 28. Lynn et al. further teach that the total thickness of the insulation boards is about 0.5 inches (~ 12.7 mils to about 4.25 inches (~106 mils), of which the thickness of the facing sheets is generally 0.3 mils to 5 mils, with monolayer facers being preferably about 0.3 mils to 3 mils and composite facers being preferably about 0.3 mils to 4 mils. Col. 5, lines 34-41.

The Examiner looks to Horner Jr. et al. for the teaching of a surfactant component and surfactant-generated microcells component. Applicants note that Horner et al. teaches a foamed facer for an insulation board that comprises a fiber glass mat coated with a prefoamed composition comprising a thixotropic polymer latex (binder), a foam sustaining surfactant (surfactant generated microcells), a filler, such as clays and a flame retardant.

In stark contrast to Lynn et al., the facers of Horner et al. include a coating that is from about 5 mils to about 100 mils. Col. 4, lines 6-15. The facers of Horner et al. further include a fibrous mat on which the coating is applied, which have a thickness of about 10 to about 30 mils. Col. 3, lines 34-35. Horner et al. further teaches that the facers can have a thickness of about 100 mils. Applicants thus assert that the skilled artisan looking to Horner et al. would not combine the teachings of Horner et al. with Lynn et al. because Horner et al. relates to facers that are very thick (e.g. 100 mils) whereas Lynn et al. teaches facers that are films (i.e. very thin) having a thickness of 0.3 to 4 mils for composite facers.

The Examiner looks to the teaching of Martin et al. for the missing element of preformed microcells, stating that Martin et al. teaches microspheres for providing a high insulating value to insulating coatings and that it would have been obvious to the skilled artisan to combine Lynn et al., Horner Jr. et al and Martin et al.

Applicants respectfully disagree. First, as noted above, with respect to Lynn et al. and Horner Jr. et al., a skilled artisan would not combine these teachings because they relate to very different types of facers, Horner et al. relating to a very thick facer of about 100 mils and Lynn et al. relating to a thin film of about 0.3 to 4 mils. Moreover, there is nothing in the teaching of Martin et al. that would remedy the deficiencies of Lynn et al. or Horner Jr. et al. Thus, whether taken alone or in combination, Lynn et al., Horner Jr. et al. and Martin et al. do not teach or suggest all the elements of the present claims.

Accordingly, Applicants respectfully request withdrawal of the rejection of the claims under 35 U.S.C. §103(a) as obvious over Lynn et al. in view of Horner Jr. et al. and Martin et al.

Attorney Docket No. 03398.000006

Conclusion

In view of the foregoing remarks, Applicants submit that the present invention is now in condition for allowance. Accordingly, favorable reconsideration of the application is earnestly solicited. Please send any further correspondence relating to this application to the undersigned attorneys at the address below.

Applicants' undersigned attorneys may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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